

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 160.

WASHINGTON, D. C.

April 26, 1902.

AGRICULTURE.

IOWA.

HON. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of Iowa, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It also includes the house in which the farmer resides and all other buildings used by him in connection with his farming operations.

The farms of Iowa, June 1, 1900, numbered 228,622, and had a value of \$1,497,554,790. Of this amount, \$240,802,810, or 16.1 per cent, represents the value of buildings, and \$1,256,751,980, or 83.9 per cent, the value of land and of improvements other than buildings. On the same date the value of farm implements and machinery was \$57,960,660, and of live stock, \$278,830,096. These values, added to that of farms, give \$1,834,345,546, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This

value for 1899 was \$365,411,528, of which amount \$169,858,981, or 46.5 per cent, represents the value of animal products, and \$195,552,547, or 53.5 per cent, the value of crops, including forest products. The total value of farm products for 1899 exceeds that for 1889 by \$206,063,684, or 129.3 per cent. A part of this apparent increase is doubtless due to a more detailed enumeration in 1900 than in 1890.

The value of "net farm products" or the "gross farm income" is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was \$102,023,040, leaving \$263,388,488 as the gross farm income. The percentage which this amount is of the "total value of farm property" is referred to in this bulletin as the "percentage of gross income upon investment." For Iowa in 1899 it was 14.4 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the final report on agriculture in the United States, which will be published about June 1, 1902. The present publication is designed to present a summarized advance statement for Iowa.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

AGRICULTURE IN IOWA.

GENERAL STATISTICS.

Iowa has a total land surface of 55,475 square miles, or 35,504,000 acres, of which 34,574,337 acres, or 97.4 per cent, are included in farms.

The state extends from the Mississippi River westward to the Missouri, and its entire area is included in the drainage basin of these two rivers, by far the larger part lying within the basin of the Mississippi. In general the land slopes toward the south and east. There is very little woodland, and almost the entire area is available for cultivation.

The soil, which is a dark, heavy, drift loam from 2 to 5 feet in depth, is very fertile, well drained, and easily cultivated. Iowa is especially adapted to stock raising, and in 1900 stood first among the states of the Union in total value of domestic animals.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved:

TABLE 1.—FARMS AND FARM AGREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900.....	228,622	34,574,337	29,897,552	4,676,785	151.2	86.5
1890.....	201,903	30,491,541	25,428,899	5,062,642	151.0	83.4
1880.....	185,351	24,752,700	19,866,541	4,886,159	133.5	80.3
1870.....	116,292	15,541,793	9,396,467	6,145,326	133.6	60.5
1860.....	61,168	10,069,907	3,792,792	6,277,115	164.6	37.7
1850.....	14,805	2,786,054	824,682	1,911,382	184.8	30.1

The number of farms reported June 1, 1900, was fifteen times as great as the number reported in 1850, and was 26,719, or 13.2 per cent, greater than in 1890. The total farm acreage has increased steadily, and since 1880 more rapidly than the number of farms, so that the average size

of farms increased from 133.5 acres in 1880 to 151.2 acres in 1900, the greater part of this gain taking place in the decade from 1880 to 1890. The improved acreage has increased faster than the total farm area, as is shown by the steady and rapid increase in the percentage of farm land improved.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products. ¹
1900.....	\$1,834,345,546	\$1,497,554,790	\$57,960,660	\$278,830,096	\$365,411,528
1890.....	1,100,682,579	857,581,022	36,665,315	206,436,242	159,847,844
1880.....	721,517,214	567,430,227	29,371,884	124,715,103	136,103,473
1870 ²	496,159,156	392,662,441	20,509,582	82,987,133	*114,886,441
1860.....	147,702,373	119,899,547	5,327,033	22,476,293	
1850.....	21,519,711	16,657,567	1,172,869	3,689,275	

¹ For year preceding that designated.

² Values for 1870 were reported in depreciated currency. To reduce to specie basis of the other figures they must be diminished one-fifth.

* Includes betterments and additions to live stock.

The value of farm property in 1900 was nearly ninety times as great as in 1850. The gain in the last decade was \$733,662,967, or 66.7 per cent. Of this amount \$639,973,768, or 87.2 per cent, represents the gain in value of land, improvements, and buildings; \$21,295,345, or 2.9 per cent, that in implements and machinery; and \$72,393,854, or 9.9 per cent, that in live stock.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With build-ings.	Total.	Improved.	Land and improve-ments (ex-cept build-ings).	Buildings.	Imple-ments and machinery.	Live stock.		Labor.	Fertili-zers.
The State	228,622	220,626	84,574,397	29,897,552	\$1,256,751,980	\$240,802,810	\$57,960,660	\$278,830,096	\$263,338,488	\$16,375,670	\$337,190
Adair	2,887	2,295	360,224	331,570	10,868,810	1,965,700	503,840	3,414,436	2,869,447	116,410	1,560
Adams	1,949	1,813	273,042	249,130	9,662,040	1,628,760	408,450	2,903,761	2,313,077	85,400	4,380
Atlamakee	2,368	2,333	383,324	223,256	8,389,430	2,294,690	627,670	2,110,468	2,268,083	173,130	1,600
Appanoose	2,526	2,422	325,147	265,492	8,111,620	1,653,450	373,280	2,321,730	1,762,170	64,080	1,370
Arundson	1,988	1,901	282,466	272,197	9,814,920	1,630,500	474,110	2,650,486	2,892,791	102,580	7,270
Benton	2,774	2,091	458,801	403,859	20,788,190	3,966,730	799,280	3,896,565	3,828,340	281,900	4,050
Blackhawk	2,257	2,177	349,194	318,102	14,943,470	3,354,200	675,210	3,067,935	3,040,066	194,690	4,380
Boone	2,670	2,507	349,990	307,339	13,481,850	2,495,340	632,200	2,656,793	2,656,793	142,280	190
Bremer	2,004	1,937	275,501	242,494	10,399,470	3,034,690	624,200	2,255,818	2,250,581	180,860	2,870
Buchanan	2,447	2,389	357,516	320,901	12,852,620	2,755,840	646,880	3,014,781	3,115,964	166,840	2,020
Buena Vista	1,956	1,919	350,231	338,925	13,001,470	2,806,120	562,610	2,736,760	2,512,688	138,970	1,970
Butler	2,304	2,231	360,678	323,179	14,145,860	2,571,020	641,120	2,841,148	2,773,647	167,050	6,070
Calhoun	2,134	2,032	362,873	345,079	13,248,830	1,992,660	584,120	2,496,244	3,047,603	137,170	6,060
Carroll	2,175	2,150	350,987	340,597	13,676,400	2,527,650	652,530	2,875,267	2,847,862	146,960	6,150
Cass	2,896	2,256	354,644	333,857	13,725,420	2,395,790	602,070	3,610,416	3,848,196	199,420	6,940
Cedar	2,291	2,245	348,056	313,287	16,824,370	3,627,460	649,060	3,658,147	3,261,015	208,440	2,110
Cerro Gordo	1,957	1,907	353,188	314,078	13,272,230	2,884,700	640,230	2,610,465	2,811,297	189,780	420
Cherokee	1,908	1,839	354,043	323,893	15,841,580	2,268,410	673,840	3,051,784	2,584,577	187,850	7,560
Chickasaw	2,197	2,128	311,208	255,980	11,694,740	2,330,060	589,290	2,251,825	2,280,213	161,410	1,540
Clarke	1,714	1,663	250,491	197,818	7,131,900	1,248,960	318,790	2,183,388	1,509,431	65,470	2,390
Clay	1,684	1,604	344,960	324,815	11,440,140	1,750,250	526,780	2,413,082	2,186,981	146,720	2,030
Clayton	3,318	3,264	459,892	814,776	13,826,980	3,065,540	808,890	3,217,318	3,393,418	259,200	7,480
Clinton	2,786	2,719	423,251	383,662	19,623,080	4,285,110	822,230	3,656,715	3,782,638	352,040	9,800
Crawford	2,649	2,561	449,956	416,917	15,266,790	3,049,900	779,560	3,988,215	3,534,097	206,770	8,540
Dallas	2,607	2,522	359,280	307,221	14,124,010	2,506,300	566,660	3,279,689	3,187,544	138,840	760
Davis	2,553	2,478	318,392	246,558	7,762,460	1,724,020	399,810	2,260,854	1,779,895	64,030	2,100
Decatur	2,508	2,412	326,078	235,657	8,537,330	1,676,120	402,600	2,417,731	1,800,229	90,280	3,850
Delaware	2,241	2,199	355,619	292,386	14,607,900	3,123,380	754,660	3,038,823	2,951,827	204,190	8,010
Des Moines	2,189	2,104	250,572	186,832	9,875,800	2,475,230	490,030	1,939,408	1,976,447	128,250	2,390
Dickinson	995	936	221,970	198,812	6,243,020	970,260	329,660	1,143,266	1,101,161	74,930	80
Dubuque	2,485	2,442	367,203	259,785	13,981,470	3,336,240	779,230	2,894,899	2,961,925	200,370	8,730
Emmet	1,056	999	236,580	209,877	6,359,570	979,200	312,020	1,341,214	1,293,151	104,300	970
Fayette	3,261	3,169	445,118	356,848	15,210,420	3,756,290	828,120	3,592,446	3,266,824	229,670	720
Floyd	2,054	1,976	308,843	278,541	11,583,320	2,381,020	614,370	2,201,368	2,559,416	148,900	11,480
Franklin	1,874	1,815	362,601	329,411	13,878,480	2,025,880	564,000	2,728,718	2,769,888	171,910	5,140
Fremont	2,394	2,245	328,958	295,577	12,791,750	1,996,860	420,280	2,646,021	2,467,785	178,680	2,570
Greene	2,314	2,260	366,125	329,617	13,018,450	2,186,710	584,070	2,849,654	2,671,872	140,540	1,680
Grundy	1,783	1,738	316,912	304,421	15,614,830	2,337,520	615,690	2,751,260	2,955,776	185,610	5,600
Guthrie	2,492	2,367	357,076	304,646	11,201,840	2,025,720	512,760	3,090,133	2,794,223	121,900	1,840
Hamilton	2,245	2,195	364,042	328,808	13,245,110	2,364,880	595,720	2,704,918	2,804,782	159,790	1,470
Hancock	1,703	1,660	349,342	322,088	11,367,060	1,735,980	565,090	2,068,541	2,153,116	142,700	1,840
Hardin	2,294	2,245	351,046	305,871	13,272,250	2,471,260	604,990	2,852,577	2,915,380	158,410	1,840
Harrison	3,224	3,003	422,740	332,303	12,580,850	2,481,820	655,470	3,374,820	3,154,940	203,020	3,830
Henry	2,252	2,181	271,588	215,464	10,728,740	2,506,750	461,980	2,872,828	2,096,719	106,870	2,180
Howard	1,708	1,671	291,263	257,988	9,800,160	1,971,910	507,630	1,987,949	1,901,899	133,920	2,590
Humboldt	1,478	1,438	274,618	253,186	9,904,680	1,746,780	468,160	1,974,374	1,950,523	117,790	190
Ia	1,493	1,460	270,415	260,550	10,164,640	1,933,970	538,590	2,697,178	2,230,478	162,950	1,600
Iowa	2,454	2,318	368,779	312,732	13,740,820	2,828,300	616,260	3,463,023	2,987,937	192,430	5,100
Jackson	2,637	2,574	394,420	271,748	11,908,350	3,087,650	656,930	3,104,911	3,801,911	135,110	4,650
Jasper	3,320	3,196	464,105	425,393	18,995,090	3,344,060	778,600	4,447,620	4,138,061	228,970	1,640
Jefferson	2,206	2,135	268,189	211,089	9,012,520	2,247,510	445,610	2,247,468	1,818,659	85,090	2,160
Johnson	2,712	2,661	319,264	285,770	15,328,280	3,789,670	748,820	3,693,683	3,217,783	204,080	10,160
Jones	2,373	2,319	354,699	289,431	14,761,750	3,081,660	598,930	3,484,931	3,074,637	249,590	4,380
Keokuk	2,927	2,839	361,644	300,975	13,560,100	2,724,690	664,590	3,840,981	2,983,449	166,450	2,240
Kossuth	2,807	2,731	587,147	539,818	17,923,910	2,830,460	947,420	3,289,751	3,174,904	203,230	3,220
Lee	2,549	2,450	312,852	216,794	9,539,660	2,441,890	453,180	1,986,872	1,897,520	120,680	6,880
Linn	3,507	3,458	432,888	351,998	19,207,170	4,254,110	819,190	3,848,881	3,828,154	227,630	2,440
Louisa	1,619	1,580	237,972	182,032	8,812,240	1,770,530	352,660	1,791,864	1,871,756	81,710	1,440
Lucas	1,892	1,817	263,674	198,724	7,296,300	1,818,340	334,350	2,127,840	1,571,589	65,780	2,830
Lyon	1,619	1,518	358,801	344,041	11,590,090	1,727,090	552,320	1,918,442	2,238,548	268,150	7,890
Madison	2,600	2,505	354,216	271,717	11,373,450	2,206,850	517,930	3,325,232	2,635,436	119,750	5,850
Mahaska	3,202	3,082	358,250	307,823	14,835,970	3,073,970	683,180	3,820,208	3,090,997	134,440	4,250
Marion	2,914	2,729	351,163	292,500	12,043,210	2,104,720	460,680	3,122,870	2,659,380	98,540	1,500
Marshall	2,400	2,384	360,232	384,872	15,403,970	2,993,000	700,740	3,132,071	3,318,962	182,720	7,040
Mills	2,016	1,851	272,815	241,455	11,492,560	2,033,310	441,020	2,683,799	2,450,667	188,380	3,190
Mitchell	1,718	1,665	288,600	257,107	11,823,630	2,181,900	550,550	2,083,764	2,326,906	200,780	500
Monona	2,491	2,374	386,780	305,664	12,084,550	1,851,220	566,600	2,917,524	2,745,540	190,380	620
Monroe	1,987	1,833	262,296	181,110	7,756,140	1,863,820	364,850	1,539,749	1,452,296	59,160	9,770
Montgomery	1,940	1,858	272,667	252,009	12,045,490	1,976,010	470,550	2,799,733	2,821,883	155,020	100
Muscatine	1,976	1,909	264,121	219,652	11,842,880	2,604,270	492,710	2,197,676	2,416,888	199,070	10,690
O'Brien	1,845	1,791	360,025	343,008	13,754,540	2,171,510	633,950	2,618,240	2,614,846	215,780	540
Osceola	1,038	1,047	246,875	236,089	8,011,300	1,123,060	400,770	1,096,673	1,299,984	118,000	490
Page	2,643	2,549	338,132	311,440	14,362,640	2,660,800	679,330	3,446,391	3,184,944	176,790	2,880
Palo Alto	1,601	1,630	342,509	320,884	9,872,930	1,421,810	442,810	1,982,055	1,954,090	106,740	1,510
Plymouth	2,643	2,542	341,967	289,765	19,383,570	2,423,490	877,200	3,423,044	3,615,604	278,990	3,770
Pocahontas	2,005	1,988	365,455	344,243	11,338,110	2,206,070	569,880	2,698,035	2,376,889	93,770	80
Polk	3,171	3,023	376,252	326,789	18,799,790	3,272,560	689,040	3,195,246	3,550,235	186,300	6,390
Pottawattamie	4,239	3,954	509,930	523,790	24,223,700	4,440,310	1,007,070	5,414,155	5,880,116	369,990	7,890
Poweshiek	2,322	2,245	356,620	333,773	14,983,600	2,824,640	682,730	3,905,124	3,249,060	203,050	4,210
Ruggold	2,356	2,249	340,111	295,581	9,877,970	1,638,320	414,870	3,215,154	2,229,624	91,730	1,670

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES—Continued.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With buildings.	Total.	Improved.	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		Labor.	Fertilizers.
Sac	1,999	1,962	364,232	354,151	\$13,892,300	\$2,590,690	\$633,120	\$3,189,585	\$2,936,298	\$206,220	\$970
Scott	2,347	2,307	278,946	254,739	14,987,980	3,973,940	750,200	2,489,635	2,961,750	337,330	5,930
Shelby	2,387	2,285	371,873	350,733	13,813,760	2,418,980	661,610	3,626,677	3,245,560	205,360	4,760
Sioux	2,451	2,322	476,021	452,031	18,558,110	2,675,470	737,980	3,094,698	3,454,171	333,140	4,120
Story	2,436	2,326	356,654	329,856	16,780,830	2,027,360	658,280	2,859,454	3,131,013	151,970	5,080
Tama	2,725	2,632	438,596	391,668	18,403,280	3,277,300	802,290	3,835,081	3,845,577	230,750	3,090
Taylor	2,581	2,487	337,002	294,010	11,381,040	2,070,700	448,500	3,244,361	2,528,801	104,220	4,280
Union	1,823	1,742	268,513	212,705	8,622,540	1,593,330	395,850	2,517,181	1,967,490	100,890	1,700
Van Buren	2,242	2,192	300,111	210,723	8,079,130	2,032,080	414,350	2,260,911	1,850,524	79,920	3,750
Wapello	2,311	2,237	262,459	208,849	9,282,280	1,965,530	404,340	2,141,102	1,817,884	95,290	1,480
Warren	2,926	2,833	351,783	287,010	11,931,710	2,266,510	463,330	3,306,985	2,675,808	107,160	1,850
Washington	2,511	2,404	344,695	293,219	14,662,740	2,322,430	617,770	3,348,190	2,995,344	144,000	4,400
Wayne	2,285	2,189	332,762	298,910	9,826,640	1,891,240	463,590	2,732,306	1,359,592	95,560	1,400
Webster	2,564	2,502	423,975	350,558	15,556,930	2,643,920	759,620	2,733,318	2,760,576	169,450	1,780
Winnebago	1,512	1,470	239,085	207,969	7,643,020	1,294,890	367,910	1,897,096	1,459,966	84,720	1,800
Winnesiek	2,960	2,802	423,227	338,358	14,288,410	3,626,140	731,980	2,941,096	3,225,513	301,320	2,000
Woodbury	3,231	3,073	522,737	449,681	16,297,170	2,878,120	800,110	3,703,887	3,902,855	235,710	17,740
Worth	1,485	1,452	249,081	239,292	8,809,130	1,662,570	436,570	1,472,731	1,066,766	135,810	1,400
Wright	1,878	1,818	366,871	330,951	13,221,370	2,048,830	613,460	2,621,848	2,584,921	182,810	100
Sac and Fox ¹	28	18	881	789	31,450	4,310	3,380	7,540	5,426	80	-----

¹ Indian reservation.

In surface, soil, drainage, and other natural features the counties of Iowa are so similar that no striking differences are shown in their agricultural statistics. The average size of farms is largest in the northwestern counties, exceeding 200 acres in a few instances. The percentage of farm land improved does not vary materially. The average values of farms range from \$4,000 to \$10,000, being determined more by transportation facilities and the nearness of markets than by natural advantages.

The average expenditure for labor per farm was highest in the northwestern counties, where the average size of farms is greatest, and in the counties containing the largest cities. The amounts expended for fertilizers were small, averaging less than \$1.50 per farm, and in no county exceeding 5 cents per acre.

Only two counties, Grundy and Shelby, have fewer farms than in 1890, and in both cases the decreases are slight. Grundy is the only county reporting a smaller farm acreage than ten years before, but several counties report smaller improved acreages. These decreases are due largely to the stricter definition of the term "improved" by the Twelfth Census than by preceding censuses. Increases are shown for all counties in the values of the various forms of farm property, with the exception of live stock in Des Moines and Tama counties.

FARM TENURE.

Table 4 gives a comparative exhibit of farm tenure for 1880, 1890, and 1900.

The farms operated by tenants are divided into groups designated as farms operated by "cash tenants," and farms

operated by "share tenants." These groups comprise, respectively: (1) Farms operated by individuals who pay a cash rental or a stated amount of labor or farm produce; (2) farms operated by individuals who pay as rental a stated share of the products.

In Table 5 the tenure of farms for 1900 is given by race of farmer, the farms operated by owners being subdivided into four groups designated as "owners," "part owners," "owners and tenants," and "managers." These terms denote, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other or others owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners. ¹	Cash tenants.	Share tenants.	Owners. ¹	Cash tenants.	Share tenants.
1880	228,622	148,886	44,502	35,234	65.1	19.5	15.4
1890	201,993	145,183	24,940	31,780	71.9	12.4	15.7
1900	185,351	141,177	8,421	35,753	76.2	4.5	19.3

¹ Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State.	228,622	116,188	28,988	2,129	1,581	44,502	35,234
White	228,395	116,090	28,952	2,129	1,577	44,452	35,195
Colored	227	98	36		4	50	39
Indian	27	26	1				
Negro	200	72	35		4	50	39

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State.	100.0	50.8	12.7	0.9	0.7	19.5	15.4
White	100.0	50.8	12.7	0.9	0.7	19.5	15.4
Colored	100.0	43.2	15.8		1.8	22.0	17.2

That the facts epitomized in the foregoing tables may be seen in their true relation to the agricultural conditions and changes on Iowa farms in the past twenty years, they should be considered in connection with the occupation tables of the census. Those tables are available for 1880 and 1890, but not as yet for 1900. In 1880 the total number of males engaged in agriculture was 302,171, while in 1890 it was 313,484. In 1880, 88,045 of the total number were employed at farm labor for wages; in 1890 but 73,753 were so employed. In connection with each 1,000 farms there were in 1880, 1,630 males employed in some capacity. Of that number, approximately 762 operated farms as owners; 238, as tenants; 470 were farm laborers working for wages; and 160 were employed for wages at special occupations, such as gardening, floriculture, etc. In 1890 for each 1,000 farms, 1,553 males were employed, of whom 719 operated farms as owners; 281, as tenants; 365 were employed as wage laborers; and 188 at special occupations.

To show the relative changes that took place in the four classes of farming population, the following comparative statement is presented: Of every 1,000 males engaged in agriculture in 1880, approximately 467 operated farms as owners; 146, as tenants; 292 were farm laborers; and 95 were employed at special occupations for wages. In 1890 there were 463 owners, 181 tenants, 235 farm laborers, and 121 persons engaged in special occupations. The relative number of owners was practically the same in 1890 as in 1880; tenants and laborers employed at special occupations increased faster than the total number of males engaged in agriculture; while the number of farm laborers working for wages actually decreased.

It may be safely assumed that the total farming population varies from decade to decade approximately with the number of males engaged in agriculture. From figures

given above it is seen that in the decade from 1880 to 1890 the number of males engaged in agriculture, and hence the total farming population, increased 3.74 per cent. During the same period, owners increased in number 2.84 per cent, and tenants 28.4 per cent, while the number of wage laborers employed on farms decreased 16.2 per cent. In each of the classes mentioned there was a movement that assisted in raising the average social and economic level of the farming population. Whether caused by the rise of farm laborers to ownership or tenancy, as appears probable from the figures reviewed, or by additions to the classes of owners and tenants through immigration, this elevation is a beneficent change in all its aspects.

The occupation tables for 1900 are not yet prepared, but if the changes in rural population are reliable indices of the changes in the farming population proper, the movements noted for the decade from 1880 to 1890 continued with but slight modification in the last decade, and the average condition of people on Iowa farms has been improved even more than is shown by the foregoing comparisons.

In connection with the changes noted above, attention is called to the specific changes in farm tenure shown in Tables 4 and 5. The number of farms operated by owners has increased 7,709, or 5.5 per cent, since 1880, while the total number of farms has increased 23.3 per cent, resulting in a decrease in the per cent of farms operated by owners. The total number of tenant-operated farms has increased 80.5 per cent. Aside from this increase, there has been another remarkable change. The number of cash tenants is over five times as great as in 1880, while in the same time the number of share tenants has decreased 1.5 per cent. In 1880, 80.9 per cent of all tenants were share tenants; in 1890, 56.0 per cent; and in 1900, 44.2 per cent. This change is believed to be the result of a growing sentiment on the part of both landlord and tenant in favor of the cash-payment system, and indicates greater independence and financial responsibility on the part of the tenant class as a whole. This belief is supported by the fact that in the most intensively cultivated regions the greater part of the tenants are cash tenants. In Cherokee county, for instance, 67.3 per cent, and in Grundy county 68.5 per cent of all tenants pay cash rentals, while in Van Buren and Winnebago counties the corresponding percentages are only 41.8 and 44.2.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number of farms conducted by the last-named class is constantly increasing.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,337	100.0	\$1,834,345,546	100.0
White farmers.....	228,395	151.3	34,558,319	100.0	1,838,523,669	100.0
Colored farmers ¹	227	70.6	16,018	(²)	821,877	(²)
Owners.....	116,188	143.2	16,639,363	48.1	918,612,747	50.1
Part owners.....	28,988	186.9	5,418,760	15.7	274,391,294	15.0
Owners and tenants.....	2,120	184.9	393,645	1.1	21,648,004	1.2
Managers.....	1,581	315.6	498,982	1.4	28,838,823	1.6
Cash tenants.....	44,502	144.9	6,449,286	18.7	338,475,628	18.4
Share tenants.....	85,284	146.9	5,174,301	15.0	252,879,050	13.7

¹ Comprising 200 negroes and 27 Indians.

² Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State-----	\$5,497	\$1,053	\$253	\$1,220	\$1,152	14.4
White farmers-----	5,500	1,054	254	1,220	1,153	14.4
Colored farmers ¹ -----	2,523	454	116	528	558	15.4
Owners-----	5,174	1,191	258	1,283	1,117	14.1
Part owners-----	6,581	1,112	301	1,472	1,547	16.3
Owners and tenants-----	6,752	1,417	300	1,699	1,342	13.2
Managers-----	11,850	2,345	334	3,712	2,397	13.1
Cash tenants-----	5,533	831	235	1,007	1,064	14.0
Share tenants-----	5,263	753	217	930	988	13.8

¹ Comprising 200 negroes and 27 Indians.

The value of the farm property of the colored farmers is \$821,877. Of this amount, \$783,377 represents the property of negroes, and \$38,500 that of Indians. Farms operated by owners have the smallest average area, 143.2 acres, while those operated by managers have the largest, 315.6. Many of the latter are adjuncts of public institutions, while others are conducted by wealthy individuals in connection with their summer homes. As a rule, such farms are favorably located and highly improved, and the average values of the various forms of farm property, shown in Table 7, are much larger for this class than for any other class of farms grouped by tenure. The ratio which the gross income of these farms bears to the total value of their farm property is, however, smaller than for the other groups. This is due to the high average valuation of land and buildings, and to the fact that many of these farms are not cultivated primarily for profit.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,337	100.0	\$1,834,345,546	100.0
Under 3 acres.....	975	1.9	1,838	(¹)	1,240,756	0.1
3 to 9 acres.....	4,756	6.0	28,517	0.1	7,078,585	0.4
10 to 19 acres.....	5,917	13.4	79,572	0.2	10,500,241	0.6
20 to 49 acres.....	21,475	35.6	765,266	2.2	49,990,584	2.7
50 to 99 acres.....	49,665	77.1	3,828,843	11.1	208,694,536	11.4
100 to 174 acres.....	79,923	140.1	11,197,376	32.4	598,231,639	32.6
175 to 259 acres.....	38,144	214.7	8,190,188	23.7	438,853,182	23.6
260 to 499 acres.....	24,609	332.0	8,171,295	23.6	413,266,142	22.5
500 to 999 acres.....	2,818	626.0	1,704,029	5.1	87,694,694	4.8
1,000 acres and over.....	340	1,610.1	547,418	1.6	23,795,137	1.3

¹ Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implementments and machinery.	Live stock.		
The State-----	\$5,497	\$1,053	\$253	\$1,220	\$1,152	14.4
Under 3 acres-----	411	673	48	141	287	22.5
3 to 9 acres-----	637	617	60	174	237	15.9
10 to 19 acres-----	878	591	75	231	282	15.9
20 to 49 acres-----	1,854	522	100	352	392	16.8
50 to 99 acres-----	2,726	687	168	621	668	15.9
100 to 174 acres-----	5,141	1,012	258	1,074	1,085	14.5
175 to 259 acres-----	7,941	1,403	346	1,684	1,594	14.0
260 to 499 acres-----	11,891	1,806	440	2,656	2,288	13.6
500 to 999 acres-----	21,661	2,639	584	6,185	4,200	13.5
1,000 acres and over-----	47,685	5,850	1,038	15,413	9,019	12.9

The group of farms containing from 100 to 174 acres each comprises the largest percentage of the total farm acreage and also the largest percentage of the total value of farm property. In this group the average values of the various forms of farm property approach nearest to the average for the state. Except for slight variations in the average value of buildings on small farms, the average values of the several forms of farm property advance with the size of the farm. For farms of less than 3 acres the average value of buildings exceeds that of land and improvements, as this class includes most of the florists' establishments and city dairies.

The average gross incomes per acre for the various groups are as follows: Farms under 3 acres, \$152.21; 3 to 9 acres, \$39.46; 10 to 19 acres, \$20.99; 20 to 49 acres, \$11.01; 30 to 99 acres, \$8.66; 100 to 174 acres, \$7.74; 175 to 259 acres, \$7.43; 260 to 499 acres, \$6.89; 500 to 999 acres, \$6.71; and 1,000 acres and over, \$5.60. In considering the relatively high gross income per acre for farms of less than 3 acres, it should be borne in mind that the income of the florists' establishments, nurseries, and

city dairies, of which this group is largely composed, are determined not so much by the acreage of land used as by the amount of capital invested in buildings, implements, and live stock, and the amounts expended for labor and fertilizers.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

Tables 10 and 11 present the leading features of the statistics relating to farms classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the value of the products not fed to live stock, the farm is designated a "hay and grain farm." If vegetables are the leading crop, constituting 40 per cent of the value of products, the farm is designated a "vegetable farm." The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive their principal income from any one class of farm products. Farms with no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,837	100.0	\$1,834,345,546	100.0
Hay and grain.....	73,210	157.6	11,636,343	33.4	573,063,766	31.2
Vegetables.....	2,136	39.9	85,320	0.2	7,437,889	0.4
Fruit.....	852	37.5	31,926	0.1	3,519,932	0.2
Live stock.....	133,625	153.2	21,133,392	61.1	1,151,548,425	62.8
Dairy produce.....	7,678	112.0	860,049	2.5	49,635,804	2.7
Tobacco.....	2	55.0	110	(1)	8,669	(1)
Sugar.....	35	115.7	4,049	(1)	325,848	(1)
Flowers and plants.....	97	6.9	669	(1)	646,435	(1)
Nursery products.....	104	60.4	6,285	(1)	866,738	0.1
Miscellaneous.....	10,883	84.2	916,194	2.7	47,292,000	2.6

¹ Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except build-ings).	Build-ings.	Imple-ments and ma-chinery.	Live stock.		
The State-----	\$5,497	\$1,053	\$253	\$1,220	\$1,162	14.4
Hay and grain-----	5,834	862	248	894	1,039	13.3
Vegetables-----	2,322	765	117	278	657	18.9
Fruit-----	2,690	1,037	113	286	605	14.7
Live stock-----	5,665	1,195	271	1,487	1,297	15.1
Dairy produce-----	4,281	989	208	937	699	10.8
Tobacco-----	3,600	350	45	839	470	10.3
Sugar-----	6,925	1,420	236	729	1,025	11.0
Flowers and plants-----	2,838	3,545	186	50	3,499	52.5
Nursery products-----	6,073	1,739	260	262	6,037	72.4
Miscellaneous-----	2,887	735	151	572	524	12.1

For the several classes of farms the average values per acre of products not fed to live stock are as follows: For farms deriving their principal income from flowers and plants, \$507.30; nursery products, \$99.89; vegetables, \$16.46; fruit, \$16.15; sugar, \$8.86; tobacco, \$8.55; live stock, \$8.20; hay and grain, \$6.59; dairy produce, \$6.25; and miscellaneous products, \$6.23.

The wide variations shown in the averages and percentages of gross income are largely due to the fact that in computing gross income no deduction is made for expenditures. For florists' establishments, nurseries, and market gardens the average expenditure for such items as labor and fertilizers represents a far larger percentage of the gross income than in the case of "hay and grain," "live stock," or "miscellaneous" farms. Were it possible to present the average net incomes, the variations shown would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,837	100.0	\$1,834,345,546	100.0
\$0.....	769	52.5	40,408	0.1	1,612,180	0.1
\$1 to \$49.....	1,192	36.5	43,534	0.1	2,286,170	0.1
\$50 to \$99.....	2,944	32.2	94,929	0.3	5,282,150	0.3
\$100 to \$249.....	14,951	48.6	652,090	1.9	35,401,930	1.9
\$250 to \$499.....	32,384	75.5	2,446,379	7.1	119,579,480	6.5
\$500 to \$999.....	72,900	119.4	8,705,650	25.2	436,140,770	23.8
\$1,000 to \$2,499.....	87,291	193.7	16,912,255	48.9	904,556,930	49.3
\$2,500 and over.....	16,191	350.8	6,679,092	16.4	329,485,936	18.0

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.....	\$5,497	\$1,053	\$253	\$1,220	\$1,162	14.4
\$0.....	1,350	308	72	368	47	2.4
\$1 to \$49.....	1,244	352	61	261	70	3.9
\$50 to \$99.....	1,138	388	57	211	183	7.7
\$100 to \$249.....	1,473	481	88	326	405	11.0
\$250 to \$499.....	2,444	537	135	527	683	11.0
\$500 to \$999.....	4,097	831	211	844	1,684	15.0
\$1,000 to \$2,499.....	7,220	1,317	323	1,503	3,924	19.3
\$2,500 and over.....	13,640	2,305	616	3,889		

The absence of income in the first group is due in part to the inability of the enumerators to secure complete reports for certain farms where changes in ownership or tenancy had occurred shortly prior to the date of enumeration. The persons in charge of such farms, June 1, 1900, could not always give definite information concerning the products of the preceding year. The same statement is also true of some of the farms with reported incomes of less than \$100. To this extent the reports fall short of giving a complete exhibit of farm income in 1899. Other farms with small reported incomes are doubtless the suburban homes of retired farmers and of city merchants and professional men, who derive their principal incomes from other than agricultural pursuits.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. Neat cattle are grouped by age, in accordance with their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—NUMBER OF DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Number.	Value.	Average value.	Number.
Calves	Under 1	1,290,279	\$14,413,585	\$11.17	9,015
Steers	1 and under 2	730,681	17,655,451	24.16	2,824
Steers	2 and under 3	603,745	23,624,389	39.18	2,891
Steers	3 and over	173,016	9,510,610	54.97	3,142
Bulls	1 and over	93,154	4,408,021	47.32	337
Heifers	1 and under 2	592,076	12,242,609	20.68	3,313
Cows kept for milk	2 and over	1,423,648	46,349,012	32.66	56,028
Cows and heifers not kept for milk	2 and over	461,031	14,315,225	31.05	2,330
Cattle	Under 1	124,527	2,991,078	24.02	3,393
Horses	1 and under 2	133,589	5,859,392	40.12	2,728
Horses	2 and over	1,131,457	69,370,107	61.15	148,654
Mule colts	Under 1	6,488	207,356	31.96	103
Mules	1 and under 2	6,807	333,830	49.04	271
Mules	2 and over	42,452	3,045,575	71.74	4,864
Asses and burros	All ages	1,832	150,768	82.30	503
Lambs	Under 1	398,850	945,615	2.37	980
Sheep (ewes)	1 and over	576,104	2,610,908	4.53	1,564
Sheep (rams and wethers)	1 and over	81,764	399,619	4.89	313
Swine	All ages	9,723,791	43,764,176	4.50	128,138
Goats	All ages	41,408	146,708	3.54	807
Fowls: ¹					
Chickens ²		18,907,673	6,535,464		
Turkeys		424,306			
Geese		223,612			
Ducks		187,752			
Bees (swarms of)		138,811	443,923	3.20	
Unclassified			6,675		
Value of all live stock.			278,830,096		

¹ The number reported is of fowls over 3 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms, June 1, 1900, was \$278,830,096, of which 34.5 per cent represents the value of neat cattle other than dairy cows; 27.9 per cent, the value of horses; 16.6 per cent, that of dairy cows;

15.7 per cent, that of swine; 2.3 per cent, that of poultry; 1.5 per cent, that of sheep and goats; and 1.5 per cent, that of all other live stock.

The prices of neat cattle are high, but not higher than the excellent grade of stock kept throughout the state will warrant.

No reports were secured of the value of live stock not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same average values, however, the total value of domestic animals not on farms would be \$12,714,320, or 4.4 per cent of the total value of farm live stock; and the value of all live stock in the state exclusive of poultry and bees not on farms, would be \$291,544,416.

CHANGES IN LIVE STOCK KEPT ON FARMS.

The following table shows the changes since 1850 in the numbers of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep. ¹	Swine.
1900.....	1,423,648	3,948,082	1,392,578	57,579	657,868	9,723,791
1890.....	1,498,418	3,397,132	1,312,079	41,648	547,394	8,266,779
1880.....	854,187	1,757,849	792,322	44,424	455,350	6,081,316
1870.....	369,811	636,424	433,642	25,485	355,493	1,353,908
1860.....	189,802	350,286	175,088	5,734	259,041	934,820
1850.....	45,704	90,917	33,536	754	149,900	323,247

¹ Lambs not included.

The number of dairy cows increased steadily in the forty years preceding 1890, but the table shows a decrease of 5.0 per cent from 1890 to 1900. It is probable, however, that this decrease is only apparent, as many of the 461,031 "cows and heifers not kept for milk" were doubtless milch cows dry at the time of enumeration, or were cows milked at some time during the year though not "kept for milk" primarily. An increase in the last decade of 48,910,829 gallons, or 10.0 per cent, in the quantity of milk produced, supports the view that the stricter definition of the term "dairy cows" by the Twelfth Census than by preceding censuses is largely responsible for the apparent decrease.

Better conveniences for feeding stock and increased and improved facilities for packing and shipping meats have given a great impetus to the raising of beef cattle in the central and western states. The table shows that the number of other neat cattle in Iowa in 1900 was over forty times as great as in 1850 and 16.1 per cent greater than in 1890. The comparatively small rate of gain in the last decade is probably due to the fact that the unusually high prices prevailing for several months just preceding the enumeration led many farmers to reduce their herds and flocks to an unusual extent.

The number of horses increased steadily during the period covered by the table, the rate of gain for the last decade being 6.1 per cent. The number of mules and asses decreased slightly in the decade from 1880 to 1890 but increased 38.3 per cent in the last decade, making the number of mules and asses in 1900, 4.1 per cent of the number of horses.

The increase in the number of horses and mules since 1890 has not kept pace with the increase in the acreage of land under cultivation, so that the average acreage now cultivated by the aid of a single working animal is larger than it was ten years ago. This change marks the introduction of better breeds of horses and the increased use of labor-saving machinery.

Except in the decade from 1870 to 1880 the number of sheep increased steadily during the half century. The rate of gain since 1890 was 20.2 per cent. The number of swine increased 17.6 per cent in the last decade.

In comparing the poultry report of 1900 (see Table 14) with that of the Eleventh Census, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such limitation was made. This fact explains to a great extent the apparent decrease in the number of all fowls. An increase of 43.4 per cent in the quantity of eggs produced is evidence that more fowls were kept in 1900 than ten years before. Compared with the figures of 1890, the present census shows decreases in the number of fowls as follows: Turkeys, 54.9 per cent; geese, 14.6 per cent; ducks, 10.8 per cent; chickens, 6.4 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the products of animal industry.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	5,015,965	\$992,334
Mohair and goat hair	Pounds	28,080	8,607
Milk	Gallons	1535,872,240	27,516,870
Butter	Pounds	61,789,288	
Cheese	Pounds	306,428	
Eggs	Dozens	99,621,920	
Poultry			10,016,707
Honey	Pounds	2,539,784	9,491,819
Wax	Pounds	49,314	305,183
Animals sold			113,078,523
Animals slaughtered			8,448,938
Total			169,858,981

¹ Includes all milk produced.

Of the value of animal products in 1899, 71.5 per cent represents the value of animals sold and animals slaughtered on farms; 16.2 per cent, that of dairy products; 11.5 per cent, that of poultry raised and eggs produced; and 0.8 per cent, that of wool, mohair, honey, and wax.

DAIRY PRODUCTS.

The production of milk in 1899 was 10.0 per cent greater than in 1889. Decreases in the last decade of 15.2 per cent in the quantity of butter and 70.5 per cent in the quantity of cheese made on farms are due in part to the transfer of these industries from the farm to the creamery, and in part to the growing demand for milk and cream in cities.

Of the \$27,516,870 given in Table 16 as the value of all dairy products in 1899, \$8,697,868, or 31.6 per cent, represents the value of such products consumed on farms, and \$18,819,002, or 68.4 per cent, the amount realized from

sales. Of the latter amount, \$12,275,844 was derived from the sale of 214,338,442 gallons of milk; \$1,849,938, from 3,323,073 gallons of cream; \$5,167,031, from 33,266,912 pounds of butter; and \$26,189, from 258,003 pounds of cheese.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was \$19,508,526, of which amount, 48.7 per cent represents the value of fowls raised, and 51.3 per cent the value of eggs produced. Between 1889 and 1899 the number of eggs produced increased 43.4 per cent.

WOOL.

The quantity of wool produced increased 89.3 per cent in the last decade, the western counties reporting the greatest gains. The average weight of fleeces in 1880 was 6.5 pounds; in 1890, 7.3 pounds; and in 1900, 7.0 pounds.

HONEY AND WAX.

The quantity of honey reported in 1900 was but 37.3 per cent as great as that reported ten years before. The quantity of wax produced decreased 26.8 per cent.

ANIMALS SOLD OR SLAUGHTERED.

The total value of animals sold and animals slaughtered on farms in 1899 was \$121,527,461, or 33.3 per cent of the value of all farm products, and 46.1 per cent of the gross farm income. Sales of live animals were reported by 190,097 farmers, or 84.6 per cent of the total number reporting live stock. The average value per farm of live animals sold was \$594.84, and of animals slaughtered, \$45.16.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total	218,955	1,392,573	6.4	210,276	1,423,648	6.8
White farmers	218,761	1,391,601	6.4	210,133	1,423,073	6.8
Colored farmers	194	972	5.0	143	575	4.0
Owners ¹	141,462	928,533	6.6	138,495	992,958	7.2
Managers	1,440	15,180	10.5	1,336	10,877	8.1
Cash tenants	42,578	255,847	6.0	40,119	245,255	6.1
Share tenants	33,485	193,013	5.8	30,526	174,567	5.8
Under 20 acres	8,902	19,292	2.2	8,008	16,812	2.1
20 to 99 acres	66,305	248,153	3.7	61,526	243,065	4.0
100 to 174 acres	78,467	475,726	6.1	76,714	522,960	6.8
175 to 259 acres	37,761	311,906	8.3	37,015	335,221	9.1
260 acres and over	27,520	337,496	12.3	27,013	305,590	11.3
Hay and grain	68,898	418,206	6.1	68,049	358,159	5.7
Vegetable	1,822	4,917	2.7	1,273	2,898	2.3
Fruit	713	1,708	2.4	545	1,231	2.3
Live stock	180,719	898,044	6.8	128,639	945,025	7.3
Dairy	7,206	37,104	5.1	7,678	74,460	9.7
Tobacco	2	5	2.5	2	8	4.0
Sugar	34	178	5.1	27	132	4.9
Miscellaneous ²	9,561	37,416	3.9	9,068	41,735	4.6

¹ Including "part owners" and "owners and tenants."

² Including florists' establishments and nurseries.

CROPS.

The following table gives the statistics of the principal crops of 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	9,804,076	Bushels	353,453,190	\$97,297,707
Wheat	1,689,705	Bushels	22,769,440	11,457,808
Oats	4,695,391	Bushels	168,364,170	33,254,987
Barley	627,851	Bushels	18,059,060	5,342,363
Rye	89,172	Bushels	1,179,970	480,817
Buckwheat	13,834	Bushels	151,120	84,842
Flaxseed	126,453	Bushels	1,413,380	1,380,102
Kafir corn	66	Bushels	1,408	552
Broom corn	2,220	Pounds	1,178,130	50,639
Clover seed		Bushels	15,114	69,640
Grass seed		Bushels	1,276,958	1,146,123
Hay and forage	4,614,378	Tons	6,851,871	30,042,246
Tobacco	131	Pounds	127,420	8,345
Hops	(¹)	Pounds	120	16
Peanuts	7	Bushels	127	164
Dry beans	2,427	Bushels	24,003	38,296
Dry pease	1,556	Bushels	27,606	24,478
Potatoes	175,888	Bushels	17,305,919	8,870,746
Sweet potatoes	2,688	Bushels	224,022	128,981
Onions	1,195	Bushels	292,097	177,088
Chicory		Pounds	80	2
Miscellaneous vegetables	81,502			3,332,039
Maple sugar		Pounds	2,820	280
Maple sirup		Gallons	2,662	2,640
Sorghum cane	7,999	Tons	10,033	29,125
Sorghum sirup		Gallons	521,212	190,695
Orchard fruits	2180,076			\$1,849,767
Small fruits	9,653			878,447
Grapes	25,180	Centals	7,403,900	\$166,360
Flowers and plants	140			320,407
Seeds	71			6,044
Nursery products	2,905			619,092
Nuts				7,608
Forest products				3,265,628
Miscellaneous				28,483
Total	22,164,564			195,552,547

¹ Less than 1 acre.

² Estimated from number of vines or trees.

³ Including value of cider, vinegar, etc.

⁴ Including value of raisins, wine, etc.

Of the total value of crops in 1899, corn contributed 49.7 per cent; oats, 17.0 per cent; other cereals, 8.9 per cent; hay and forage, 15.4 per cent; vegetables, including potatoes, sweet potatoes, and onions, 3.8 per cent; forest products, 1.7 per cent; orchard products, small fruits, and grapes, 1.5 per cent; and all other products, 2.0 per cent.

Of the total acreage cultivated 44.2 per cent was devoted to corn, 21.2 per cent to oats, and 21.0 per cent to hay and forage.

The average yield per acre of hay and forage was 1.5 tons, and the average values were \$4.38 per ton and \$6.47 per acre. The average values per acre of other crops were as follows: Flowers and plants, \$2,288.62; nursery products, \$213.11; onions, \$148.19; small fruits, \$91.00; tobacco, \$63.70; sweet potatoes, \$47.98; miscellaneous vegetables, \$40.88; grapes, \$32.12; peanuts, \$23.43; broom corn, \$22.81; potatoes, \$22.01; dry beans and dry pease, \$15.76; flaxseed, \$10.91; orchard fruits, \$10.27; cereals, \$8.74; and Kafir corn, \$8.36. The crops yielding the greatest returns were grown upon very highly improved land. Their production required a relatively large amount of labor and large expenditures for fertilizers.

CEREALS.

Table 19 is an exhibit of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR. ¹	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	627,851	13,834	9,804,076	4,695,391	89,172	1,689,705
1889	618,729	25,243	7,553,522	3,752,141	93,707	585,548
1879	198,861	10,318	6,616,144	1,507,577	102,607	3,049,288

¹ No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

YEAR.	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	18,059,060	151,120	353,453,190	168,364,170	1,179,970	22,769,440
1889	13,406,122	286,746	313,130,782	146,679,289	1,445,283	8,249,786
1879	4,022,583	166,895	275,014,247	50,610,591	1,518,605	31,154,205
1869	1,960,779	109,432	68,935,065	21,005,142	505,807	29,435,692
1859	467,103	215,705	42,410,686	5,887,645	183,022	8,449,408
1849	25,093	52,516	3,656,799	1,524,845	19,916	1,530,581

Of the total land surface of Iowa, 47.7 per cent, or nearly one-half, was devoted to cereals in 1899, corn alone covering over one-fourth. The total number of acres in cereals was 16,920,029 in 1899; 12,560,890 in 1889; and 11,490,795 in 1879. Of the total acreage in 1899, corn occupied 57.9 per cent; oats, 27.8 per cent; wheat, 10.0 per cent; barley, 3.7 per cent; rye, 0.5 per cent; and buckwheat, 0.1 per cent.

The rates of increase in acreage for the last decade were: Corn, 29.2 per cent; oats, 25.1 per cent; barley, 21.0 per cent; while the area devoted to wheat increased nearly threefold. Decreases are shown in the acreages devoted to buckwheat and rye, neither of which receive much attention.

Corn was reported in 1900 by 212,298 farmers, or 92.9 per cent of the total number, who devoted to the crop an average of 46.2 acres each. This crop was grown most extensively in the central and southwestern counties. Oats and barley are reported in largest quantities in northern counties, and wheat in northern and northwestern counties. The acreage given for cereals does not include 86,994 acres of grain cut green for hay, nor 178,409 acres devoted to corn, nonsaccharine sorghum, and similar crops grown for forage or ensilage.

HAY AND FORAGE.

In 1900, 187,122 farmers, or 81.8 per cent of the total number, reported hay or forage crops, from which, excluding cornstalks and corn strippings, they obtained an average yield of 1.4 tons per acre. The acreage in hay and forage in 1899 was 11.3 per cent less than it was ten years before.

In 1899 the acreages and yields of the various kinds of hay and forage were as follows: Wild, salt, and prairie grasses, 1,228,135 acres and 1,638,182 tons; millet and Hungarian grasses, 161,777 acres and 321,732 tons; alfalfa or lucern, 2,298 acres and 6,252 tons; clover, 148,720 acres and 229,326 tons; other tame and cultivated grasses, 2,838,095 acres and 3,823,133 tons; grains cut green for hay, 86,944 acres and 156,061 tons; forage crops, 178,409 acres and 425,483 tons; cornstalks and corn strippings, 161,875 acres and 251,702 tons.

In Table 18 the production of cornstalks and corn strip-

pings is included under "hay and forage," but the acreage is included under "corn," as the forage secured was an incidental product of the corn crop.

SORGHUM.

The area used in the cultivation of sorghum cane in 1899 was 8,287 acres, or 50.1 per cent of that reported in 1889. The products obtained were, 521,212 gallons of sirup, and 10,033 tons of cane, sold as cane.

The cultivation of sorghum cane in 1899 was reported by all counties except Dickinson and O'Brien. Johnson, Blackhawk, and Jones counties, ranking in the order named, reported the larger areas, and Blackhawk county produced the greatest quantity of sirup.

VEGETABLES.

The value of all vegetables grown in the state in 1899, including potatoes, sweet potatoes, and onions, was \$7,508,854. Of this amount 51.5 per cent represents the value of potatoes. This important crop was reported by 176,488 farmers, or 77.2 per cent of the total number in the state. There was a slight increase in acreage during the last decade, but a decrease in production.

Aside from the land devoted to potatoes and onions, 81,502 acres were used in the growing of miscellaneous vegetables. The products of 48,208 acres of this area were not reported in detail. Of the remaining 33,294 acres, concerning which detailed reports were received, 17,856 acres were devoted to sweet corn; 5,440 acres, to watermelons; 3,437 acres, to cabbages; 2,712 acres, to tomatoes; 1,316 acres, to cucumbers; 1,224 acres, to muskmelons; and 1,309 acres, to other vegetables.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	6,869,588	3,640,588	3,129,862	5,040,352
Apricots	6,809	2,693	378	296
Cherries	791,327	199,067	118,743	49,334
Peaches	516,145	82,238	6,481	25,040
Pears	104,040	12,757	5,014	7,812
Plums and prunes	1,302,217	260,600	186,312	80,878

The total number of fruit trees in the state more than doubled in the last decade, having increased from 4,197,913 to 9,590,132. The number of apple trees increased 88.7 per cent, but as the number of other fruit trees increased more rapidly, the proportion of apple trees decreased from 86.7 per cent of all trees in 1890 to 71.6 per cent in 1900. The number of plum and prune trees reported in 1900 was nearly five times as great as in 1890; peach trees increased over sixfold and pear trees over eightfold.

In addition to the trees shown in Table 20, unclassified orchard trees to the number of 46,512 are reported, with a yield of 12,232 bushels of fruit. The value of orchard products, given in Table 18, includes the value of 9,704

barrels of cider, 3,872 barrels of vinegar, and 79,740 pounds of dried and evaporated fruits.

The quantity of fruit produced in any given year is determined largely by the nature of the season, hence comparisons between the crops of 1889 and 1899 have little significance.

GRAPES.

Grapes were grown by 29,389 farmers, who obtained, in 1899, 7,403,900 centals of fruit from 2,072,101 vines. The total value of the crop, including the value of 76,301 gallons of wine made on farms, was \$166,360. Pottawattamie, Des Moines, and Polk are the leading counties in the cultivation of grapes, reporting in 1900 more than one-third of the vines of the state.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1889 was 9,653 acres, distributed among 62,260 farms. The value of the fruits grown was \$878,447, an average of \$91.00 per acre. Of the total area, 3,394 acres, principally in the southern counties, were devoted to raspberries and Logan berries, the total production of which was 3,604,210 quarts. The acreage and production of other berries were as follows: Strawberries, 2,335 acres and 3,164,320 quarts; blackberries and dewberries, 1,719 acres and 1,966,070 quarts; currants, 1,017 acres and 1,226,560 quarts; gooseberries, 777 acres and 975,890 quarts; cranberries, 1 acre and 1,952 quarts; and other berries, 410 acres and 388,130 quarts.

FLORICULTURE.

Flowers and plants were grown in 1899 by 172 farmers, of whom but 97 derived their principal income from that source. The total value of the flowers and plants grown in the state was \$320,407, of which \$307,583 represents the value of those reported by the commercial florists. The value of the farm property of the florists was \$646,435, of which \$279,660 represents the value of 669 acres of land; \$343,830, that of buildings and other improvements; \$18,090, that of implements and machinery; and \$4,855, that of live stock. They expended \$65,129 for labor, and \$1,929 for fertilizers.

LAND UNDER GLASS.

The 97 florists' establishments have 1,139,364 square feet of glass surface, which is equivalent to 854,523 square feet of land under glass. In addition to the florists there are 451 farmers who reported an aggregate of 581,737 square feet of land under glass, making the total for the state 1,436,260 square feet. The counties having large areas under glass are Dubuque, Polk, Pottawattamie, Scott, and Woodbury.

NURSERIES.

Nursery stock valued at \$619,092 was raised in 1899 by 238 farmers 104 of whom derived their principal income from that source, reporting a product of \$591,531, or 95.5 per cent of the total. The farms of the commercial nurserymen were worth \$812,490, of which \$631,590 was

invested in land, and \$180,900 in buildings and other improvements. They owned implements and machinery worth \$27,063, and live stock valued at \$27,235. In the cultivation of 6,285 acres of land, they expended \$125,205 for labor and \$3,145 for fertilizers.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was \$16,375,670, an average of \$72 per farm. The average was highest on the most intensively cultivated farms, being \$1,204 for nurseries; \$671 for florists' establishments; \$84 for fruit farms; \$81 for live-stock farms; \$75 for sugar farms; \$74 for vegetable farms; \$60 for hay and grain farms; and \$59 for dairy farms. "Managers" expended on an average, \$311; "owners," \$72; "cash tenants," \$60; and "share tenants," \$56. White farmers expended \$72 per farm, and colored farmers, \$33.

Fertilizers were purchased in 1899 to the value of \$337,190, an average of \$1.47 per farm, and a total increase of \$250,347, or nearly threefold, since 1889. The average expenditure was greatest for nurseries, amounting to \$30. For sugar farms the average was \$22; for florists' establishments, \$20; for vegetable farms, \$6; for fruit farms, \$4; and for hay and grain, live-stock, and dairy farms, \$1.

THE SAC AND FOX INDIAN RESERVATION.

The Sac and Fox Indian reservation, located in Tama county and containing an area of 2,965 acres, is a reservation in name only, as the land is owned in fee by the Indians, although held in trust for them by the Secretary of the Interior.

The inhabitants of this reservation, 385 in number, are among the most conservative and nonprogressive Indians in the United States. They have lived in the midst of civilization for nearly half a century without making any decided advancement until the last decade. A class among

them, more industrious than the rest, now till the soil and are making considerable progress in agriculture, as is shown by their recent extensive purchases of modern farming implements and machinery, and of a better grade of horses.

The principal crops grown are corn, wheat, and oats. Most of the farmers have small gardens in which potatoes, pumpkins, sweet corn, and beans are raised, pumpkins and sweet corn being dried for use during the winter months. A few of them cut the wild grass, and also raise small quantities of tame hay. A comparative table of the crops grown in 1889 and 1899 shows a marked advancement in the ten years.

PRINCIPAL CROPS GROWN ON THE SAC AND FOX RESERVATION: 1889 AND 1899.

CROPS.	Unit of measure.	1899	1889	INCREASE.	
				Total.	Per cent.
Corn.....	Bushels.....	4,400	2,500	1,900	76
Oats.....	Bushels.....	3,870		3,870	
Wheat.....	Bushels.....	914		914	
Hay.....	Tons.....	30	10	20	200

¹ Report of Commissioner of Indian Affairs, 1889.

The first crop of wheat was harvested in 1896. In 1899 the 26 Indian farmers cultivated for all purposes from 5 to 30 acres each, the largest area operated by one farmer being 48 acres. These small tracts are not owned by individual Indians, but each farmer's right of occupation is recognized by the tribe as long as he continues to cultivate his land.

The live stock of the reservation consists principally of ponies and work horses, most of the tribe being opposed to raising cattle and swine. Only one Indian owns any cattle, those reported on the reservation being the property of two white renters. A number of the Indians have chickens and a few possess turkeys.